



GSFC Supplier Assessments: Analysis and Approach

Supply Chain 2012

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Our Purpose Today

- Overview of GSFC's Supplier Assessment Program and its evolving approach
- Share current analysis of assessment findings and associated trends
- Address your questions!





What We Do and Why

- Conduct independent assessments to assure the provision of quality products/services and foster improvements for NASA mission programs/projects
 - Assess conformance with contractual requirements and quality management standards (i.e., ISO 9001, AS9100) and the effectiveness of supporting processes
 - Verify supplier corrective / preventive actions and improvements
 - Share assessment results with GSFC mission projects, across NASA and other agencies
 - Document improvements / benefits contributing to the fulfillment of requirements, mission success, and supplier capabilities (Success Stories)





What We Do and Why

continued

- Perform 45 to 50 assessments per year throughout the supply chains for GSFC mission projects
 - Primes and lower tiers: systems integrators/developers, and suppliers of subsystems, components and parts
- Completed assessments of 135 unique suppliers since 2007
- Maintain information resource / database of supplier assessment results
- Build teamwork and collaboration to foster value-added results

Findings → Actions → Improvements



Mission Success



A vibrant, artistic collage representing NASA's diverse mission portfolio. The background is a deep space scene with stars and nebulae. In the upper left, a large, fiery orange sun dominates the frame. Sweeping across the scene are several curved, glowing orbital paths in shades of orange, red, and blue. Numerous spacecraft are depicted at various stages of their missions: some are in Earth orbit, others are en route to or orbiting planets like Jupiter and Saturn, and some are on the surfaces of Mars and Venus. Specific spacecraft are labeled with their names: 'Aqua' (a satellite with a large blue solar panel), 'ICESat' (a satellite with a long mast), 'LADDER' (a small satellite), and 'Aurora' (a satellite with a long boom). The overall composition is dynamic and celebratory, showcasing the breadth of NASA's exploration efforts.

We Support GSFC's Diverse Mission Portfolio



Assessments / GSFC Mission Portfolio

Assessments in FY 2012 supported GSFC's portfolio of mission programs / projects, including:

- James Webb Space Telescope (JWST)
- Mars Atmosphere and Volatile Evolution (MAVEN) Mission
- Geostationary Operational Environment Satellite-R series (GOES-R) -- Flight and Ground projects
- Global Precipitation Measurement (GPM) Mission
- Landsat Data Continuity Mission (LDCM)
- Magnetospheric MultiScale (MMS) Mission
- Radiation Belt Storm Probes (RBSP) Mission
- Tracking and Data Relay Satellites (TDRS)
- Space Network Ground Segment Sustainment (SGSS)
- Joint Polar Satellite System (JPSS)

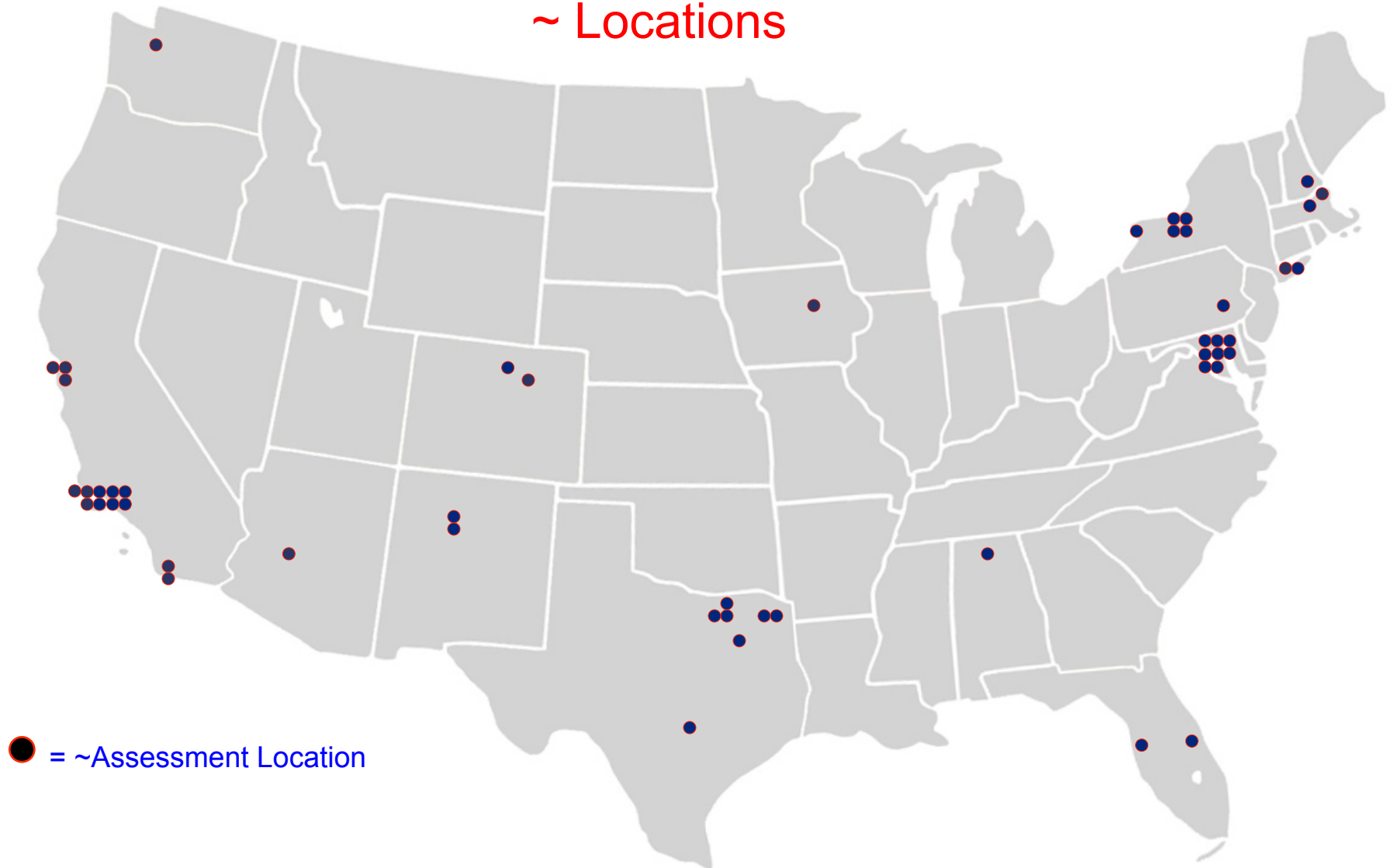




Supplier Assessments

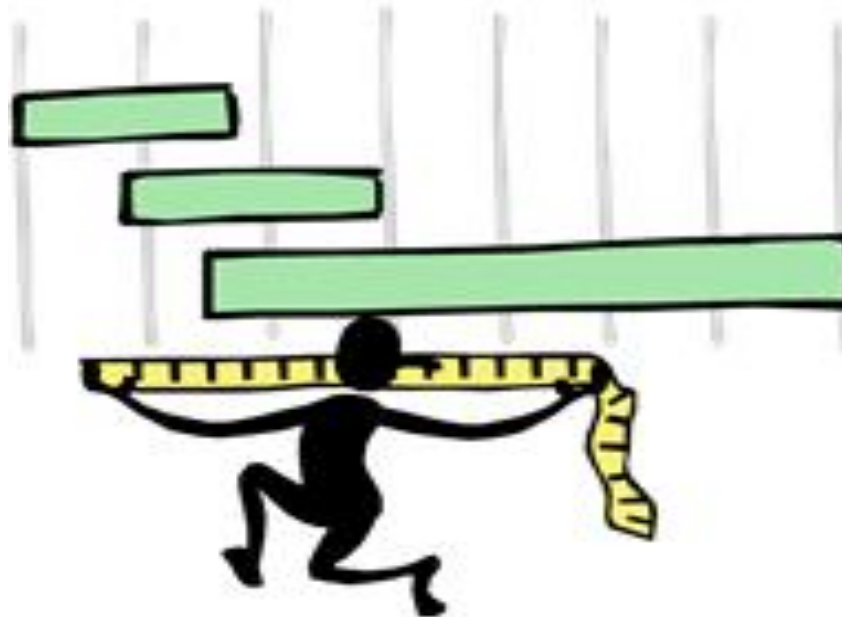
FY 2012

~ Locations





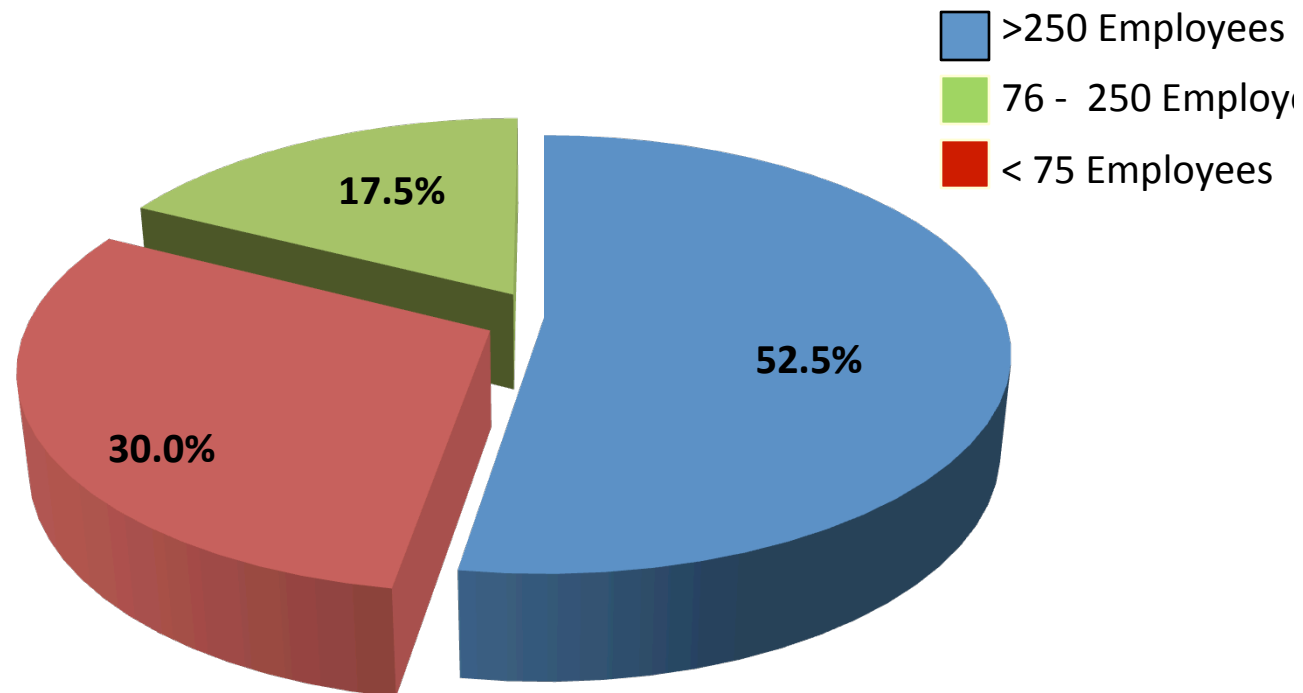
Analysis of Assessment Findings





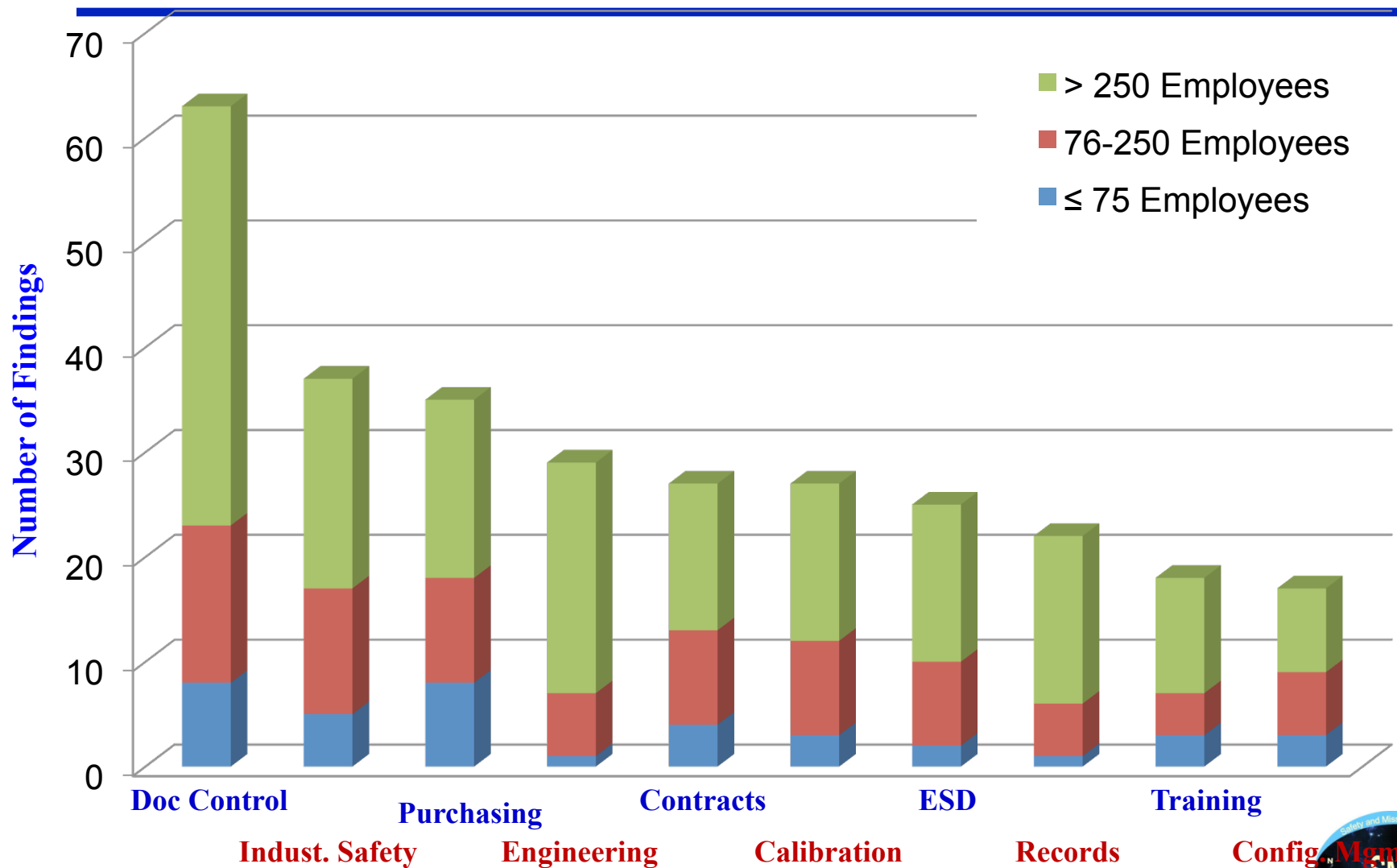
Distribution of Assessed Suppliers

09/2011 – 08/2012





Top Ten Findings by Category

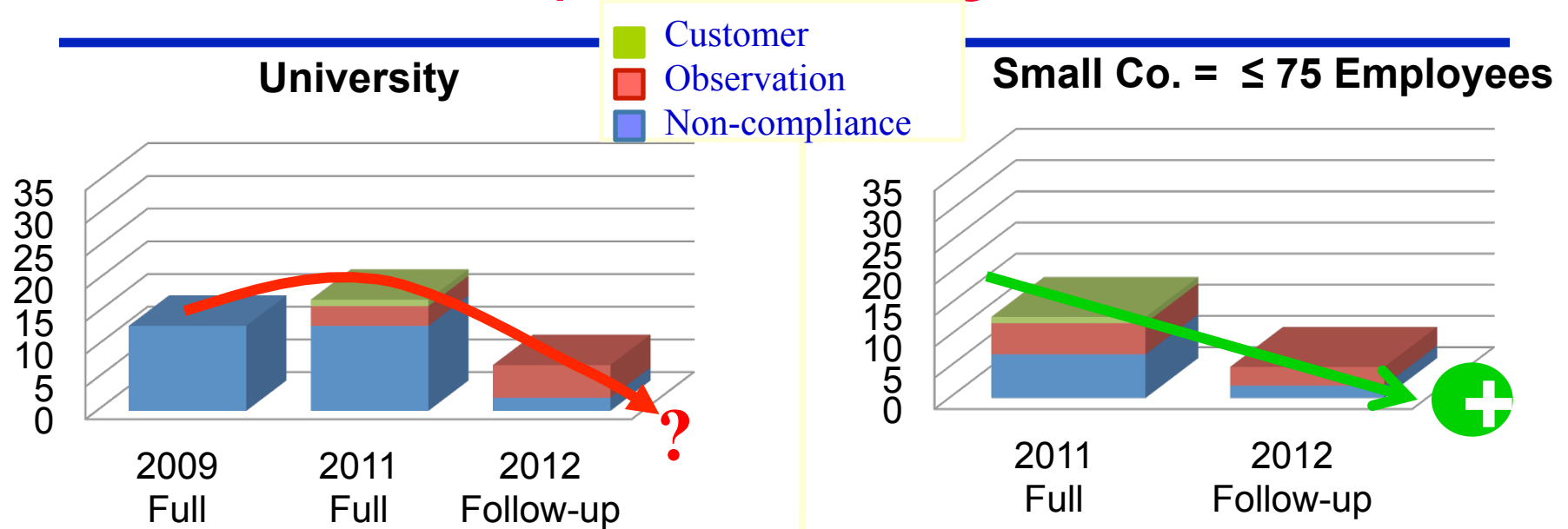


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Case Examples: Findings Over Time



- Six findings from 2011 (35%) recurred in 2012
- Reduction of findings over time shows improvements
- Calibration and GIDEP findings in all three assessments indicate recurring noncompliance to contractual requirements due to ...ineffective corrective actions, insufficient management commitment

- Five recurring findings in 2012 (38%) in contracts, document control, non-conforming material, industrial safety, and information security
- Reduction of findings over time shows improvements ... but sustained, systematic commitment is needed

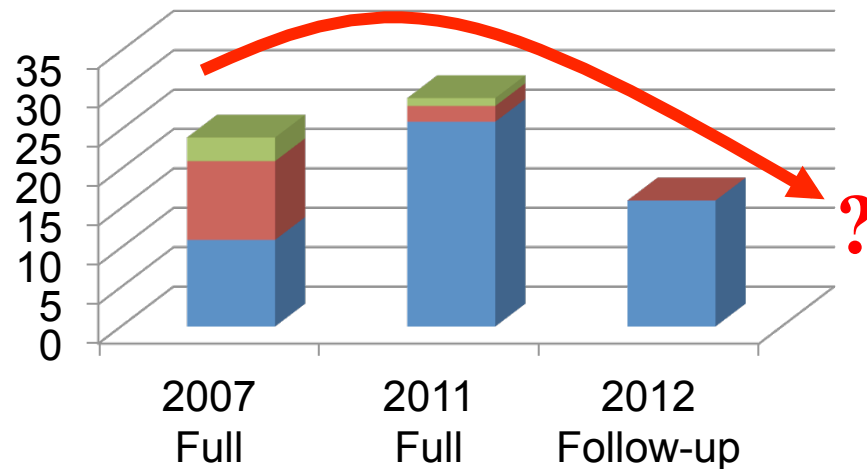




Case Examples: Findings Over Time

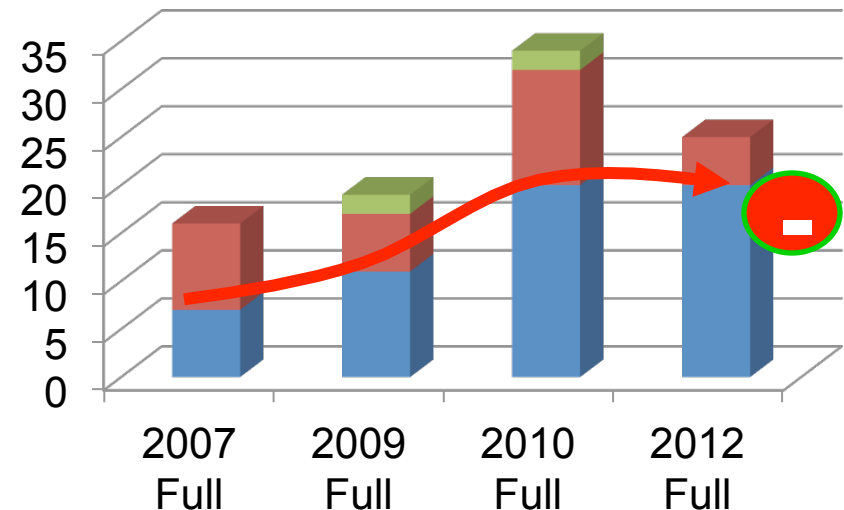
Medium Co. = 76-250 Employees

Customer
Observation
Non-compliance



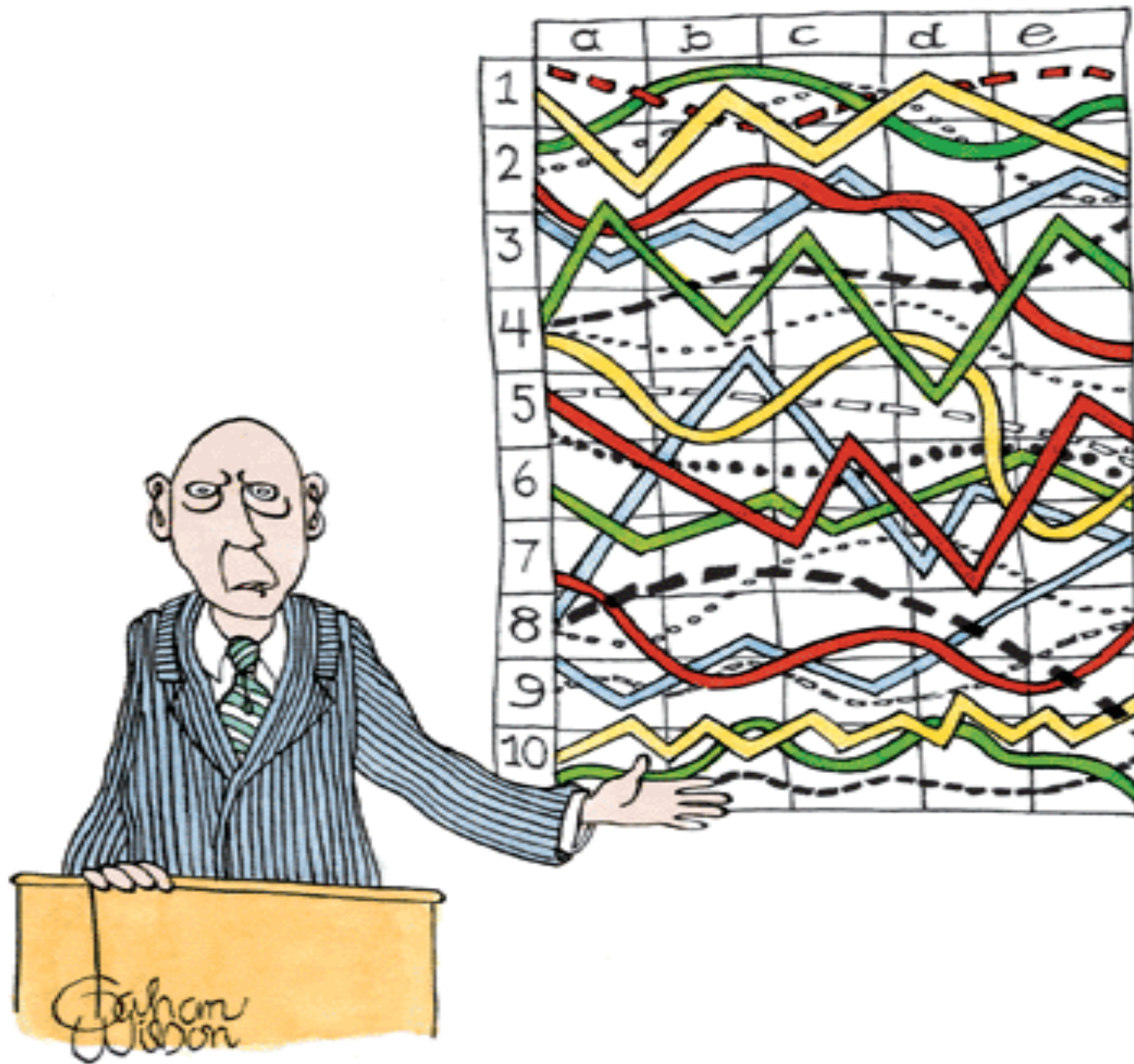
- Sixteen findings from 2011 (55%) remained unresolved in 2012
- Evaluation of suppliers and ESD control were recurring problems in 2007, 2011, and 2012.
- Corrective Actions not effective in addressing findings ... overall lack of process control

Large Co. = > 250 Employees



- Growth in findings often indicates degradation of quality management system ... due to ?





"I'll pause for a moment so you can let this information sink in."



Illustrative Findings

- No rationale for accepting risk
- Reliability data incorrect due to misuse of stress factors
- Proof load testing requirements for fixtures/carts not complete
- Peer reviews not performed by an independent person
- Risk Management Plan does not fulfill NASA requirements
- Information Security not addressed
- Product not built to NASA Workmanship Standards as required by contract
- Unidentified material used on delivered product
- Conformal coating thickness measurement not performed





Illustrative Findings

- Contractual requirements not known by supplier, e.g. calibration requirements
 - Calibration requirements not flowed to Calibration Service providers
- Subcontractors not current with latest Mission Assurance Requirements (MAR)
- Critical Data Requirements List (CDRL) items not approved as required
- Purchasing does not require homogenous lots of fasteners as contractually required
- Statement of Work (SOW) requirements not flowed to suppliers and sub-contractors
- Product shipped although Statement of Work (SOW) in “Draft” state
- Contract review process not performed or adequately documented by supplier





Assessment Approach

Highlights

- Suppliers systematically prioritized for assessments in coordination with projects / Chief Safety & Mission Assurance Officers
- Assessments conducted by an expert team under GSFC Supply Chain Management leadership
- Standard scope includes the supplier's implementation and fulfillment of:
 - Quality Management Standards, as applicable (ISO 9001, AS9100)
 - Contractual requirements for NASA projects
 - Internal Quality Management System and supporting processes
- Assess the supplier's conformance with requirements and the effectiveness of supporting processes





Assessment Approach

Highlights - continued

- Assessment Plan customized based on planning information collected from projects (concerns, risks) and the supplier (Assessment Planning Tool) along with past assessment / audit results
 - Risk-focused vs. waterfront
- Methods include review and sampling of documents / records, interviews of management and personnel, direct observation of operations, and evaluation of key processes
- Findings (nonconformances, observations and commendations) based on requirements, objective evidence, sound industry practice, and professional judgment
 - Nonconformance findings based on requirements
 - AS9100C used as the overall analytical framework

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Assessment Approach

Highlights - continued

- Supplier strengths documented as positive comments
- Supplier's corrective / preventive actions requested for initial review within 30 days from the conclusion of the assessment visit
- Follow-up assessment conducted for “eyes-on” verification of the effective implementation of actions (via people, processes, tools/systems) to resolve findings
 - May also focus on new or related concerns as warranted
- Identify and document Success Stories on resulting improvements / benefits contributing to fulfillment of requirements, mission success, and supplier capabilities





Assessment Approach

Highlights - continued

- Open communication with the supplier
 - Assessment Plan provided in advance for feedback / revision
 - Daily debriefs and Assessment Out-Brief
 - Questions / concerns addressed throughout the assessment process
 - Assessment Process Evaluation collected from the supplier
 - Assessment Report provided for Supplier comment prior to distribution

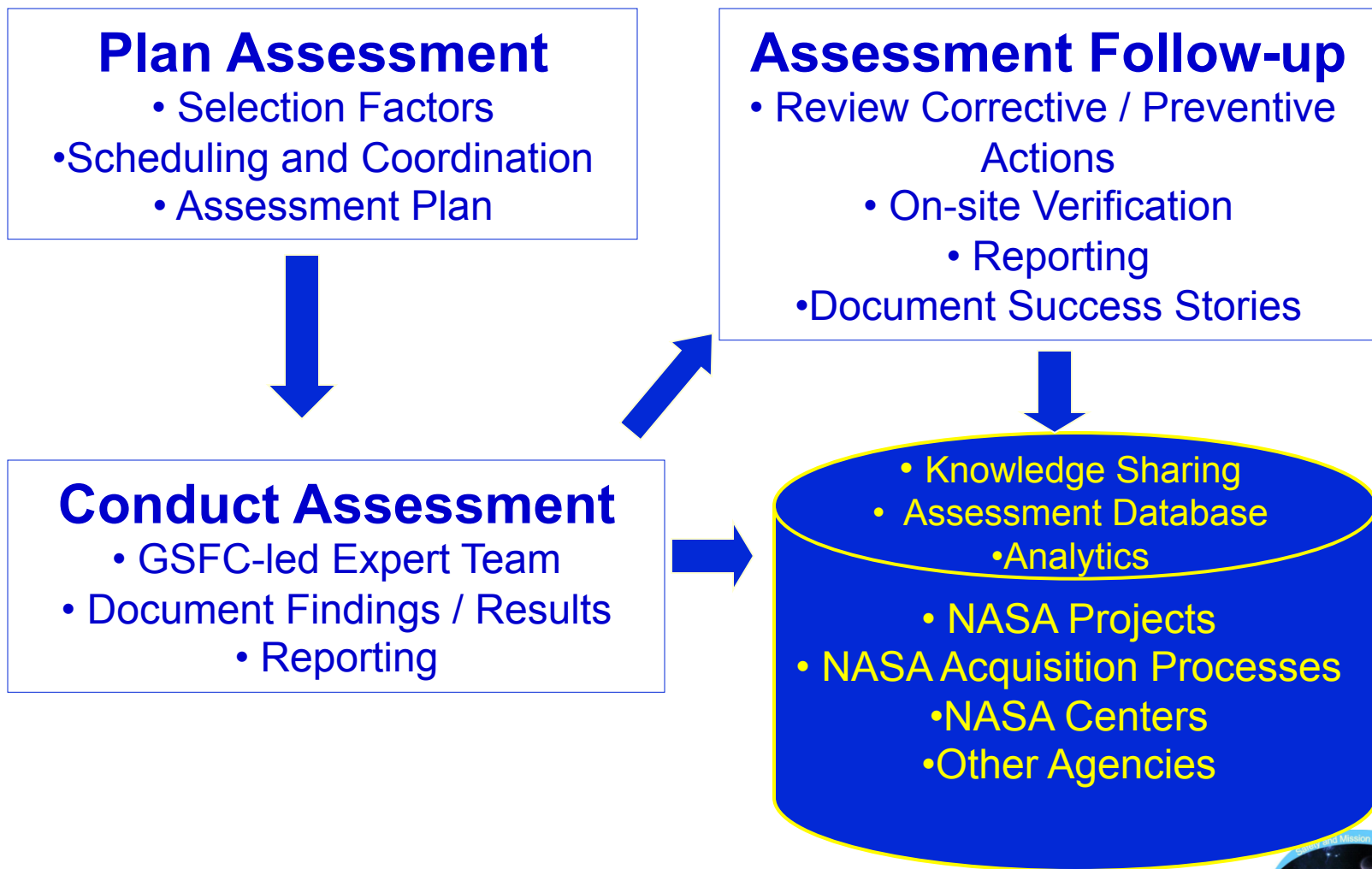
Value-Added Results for NASA and the Supplier





Process Overview

Supplier Assessments





Assessment Team Staffing

- Led by GSFC Supply Chain Management team member

- Dave Campbell
- Matt Fox
- Charles Kim
- Jonathan Root
- Louis Thomas



- Assessors from the NASA Audits, Assessments and Assurance (A3) Services contract
- Assessors / observers from GSFC, other centers / agencies and prime contractors





Questions or Comments?



A quality process addresses two separate, intertwined questions:

Are we doing the right things?

Are we doing things right?

Townsend and Gebhardt

Lessons in Leadership, Participation and Measurement



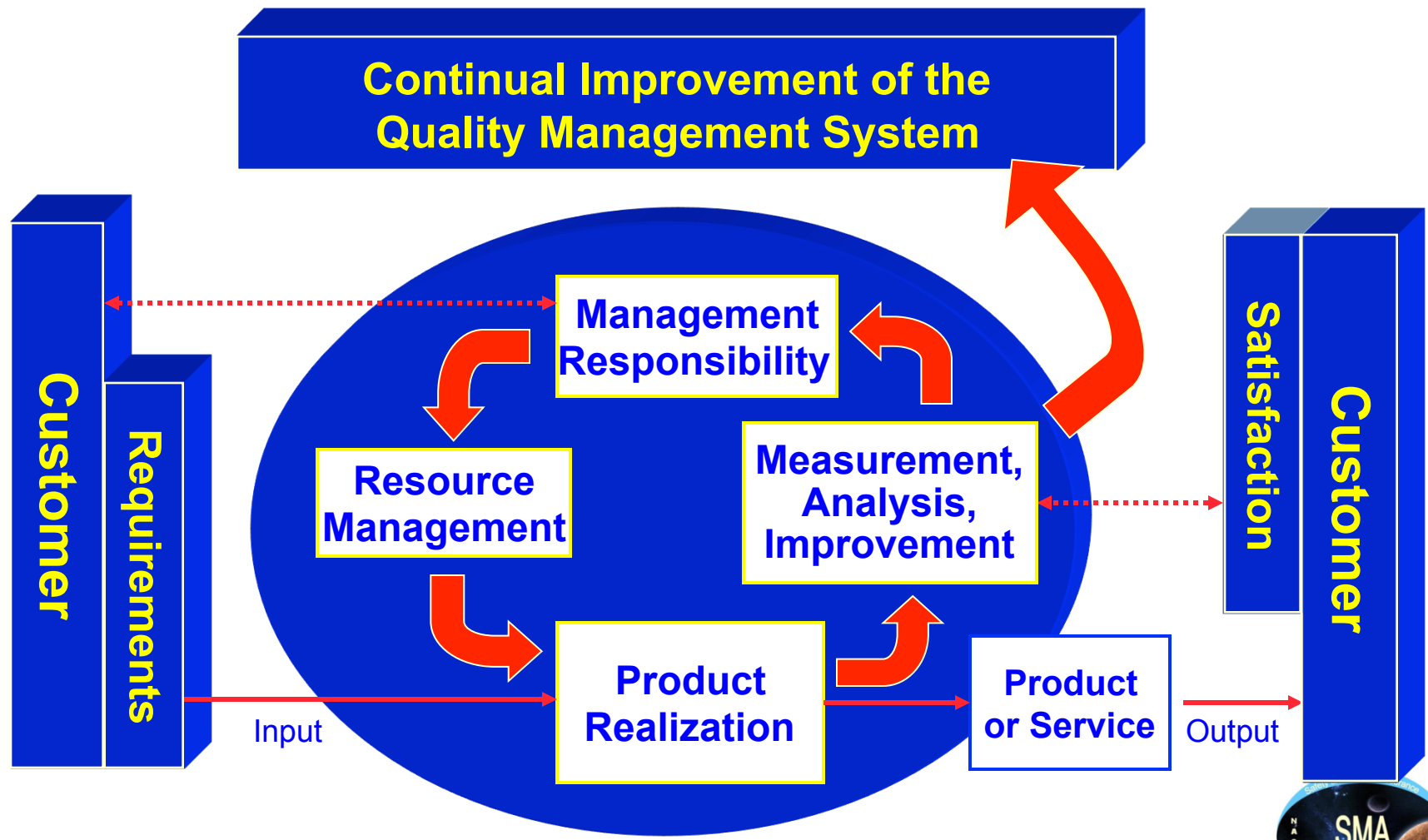


Back-up Slides





Quality Management Process Model





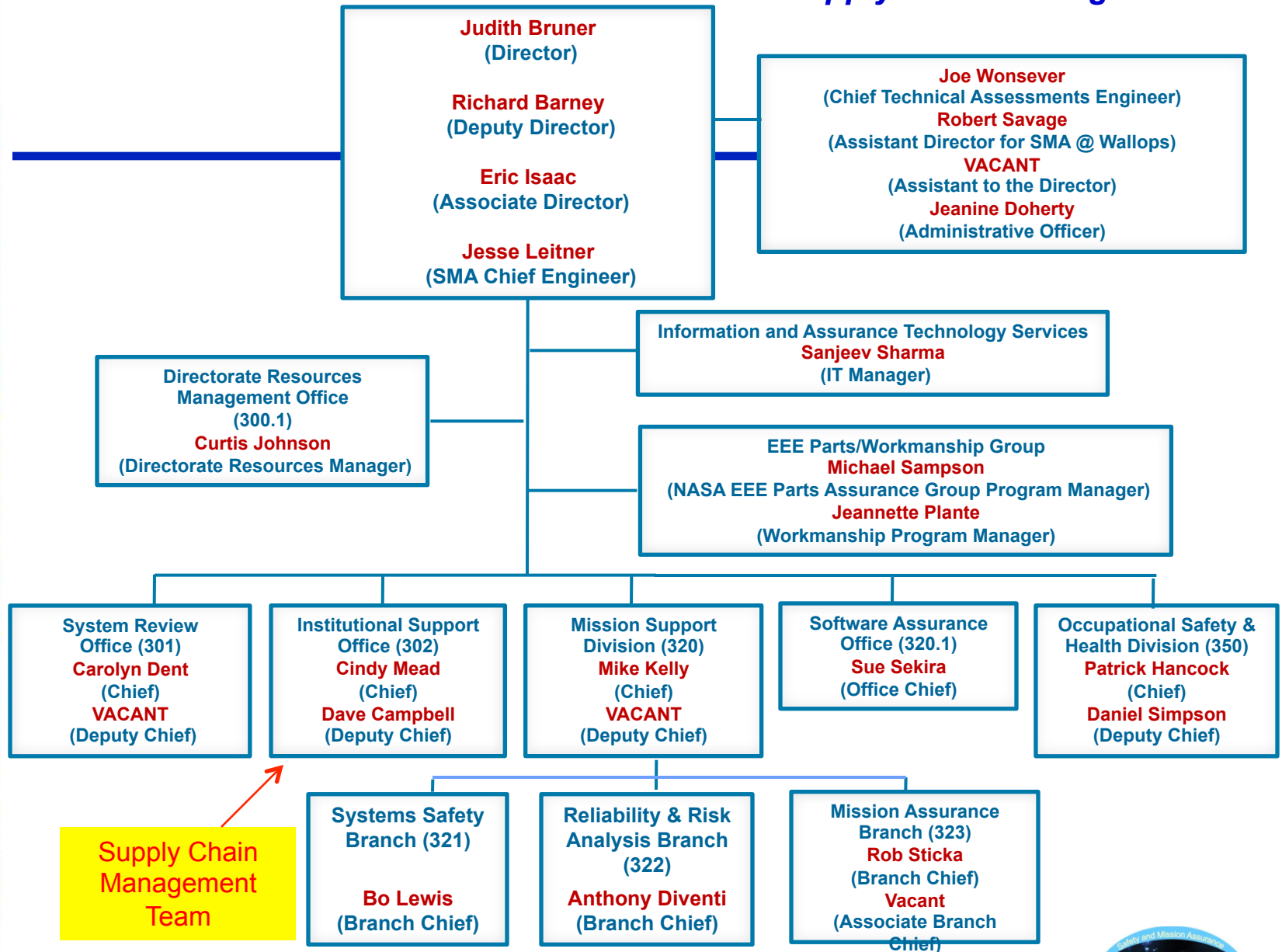
Assessment Planning Tool

Purpose			
The purpose of this document is to collect information for the planning of supplier assessments performed for the NASA Goddard Space Flight Center under the NASA Audits, Assessments, and Assurance (A3) Services contract. All information obtained is for U.S. Government purposes and is protected under provisions in NASA FAR Supplement Clause 1852.237-72 "ACCESS TO SENSITIVE INFORMATION."			
General Business Information			
(1) Legal Business Name		(2) CAGE Code	
(3) Doing Business As (DBA) Name		(4) Website	
(5) Street Address		(6) City	
(7) State or Province	(8) Postal Code	(9) Country	(10) Business Phone
Supplier Point of Contact			
(11) Primary Contact Name	(12) Title	(13) Telephone No.	(14) E-mail
(15) Alternate Contact Name	(16) Title	(17) Telephone No.	(18) E-mail
Facility / Number of Employees			
(19) Facility Total Area (Sq. Ft): Number of Buildings: Area Dedicated to Manufacturing (Sq. Ft.):		(20) Total Number of Employees: Management / Administration: Engineering / Development: Manufacturing / Production: Quality Assurance / Safety Product / Customer Support	
(21) Clean rooms: Type (ISO14644 Class): Area (Sq. Ft): Type (ISO14644 Class): Area (Sq. Ft): Type (ISO14644 Class): Area (Sq. Ft):			
Business Profile			
(22)	List a description of the products and/or services that the business provides. Attach equipment list, capabilities list, brochure, or catalog if appropriate.		
(23)	Does the facility use government furnished equipment or property?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
(24)	How long has the business been at its current facility?	Year(s)	
(25)	Has the company changed ownership in the past year?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
(26)	What percentage of the total business does NASA contracts currently represent?	%	
(27)	Is the business currently bidding on any NASA contracts?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
(28)	In the past year, has the number of employees:	<input type="checkbox"/> Stayed about the same	<input type="checkbox"/> Increased \geq 10% <input type="checkbox"/> Decreased \geq 10%





Supply Chain Management



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Assessment Report Distribution

- Assessment Report finalized after consideration of any supplier comments or suggested corrections
 - Identify strengths (positive comments, commendations)
 - Summarize findings, highlighting key areas for corrective action / improvement
- Distributed to the Supplier, NASA GSFC program / project offices and other NASA centers / U.S. government agencies upon request ; available for use in NASA procurement processes
- Supplier encouraged to share the report and corrective / preventive actions with its direct customers for NASA programs / projects
 - Reinforce supplier / customer communications
- Assessment report includes attached outbriefing, findings and attendance list

